

# REPORT ON MACHINERY.

No. 34337

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Date of writing Report 19 When handed in at Local Office 29/8/1914 Port of **GLASGOW**

No. in Survey held at **Glasgow Greenock** Date, First Survey 18/8/1913 Last Survey 29/8/1914

Reg. Book. **Q** on the **Oil Tank Steamer "Interi" "Gryahoga"** Number of Visits 48

Master Built at **Greenock** By whom built **Langemoull Greenock S.P.C. 1858** When built 1914

Engines made at **Glasgow** By whom made **Dunrobin Jackson L<sup>o</sup> (H&S)** when made 1914

Boilers made at **ditto** By whom made **ditto (H&S)** when made 1914

Registered Horse Power Owners **Anglo American Oil Co Ltd** Port belonging to **Greenock**

Nom. Horse Power as per Section 28 **529** Is Refrigerating Machinery fitted for cargo purposes **No** Is Electric Light fitted **Yes**

**ENGINES, &c.**—Description of Engines **Triple Expansion** No. of Cylinders **3** No. of Cranks **3**

Dia. of Cylinders **24-44-43** Length of Stroke **48** Revs. per minute **14.9** Dia. of Screw shaft **16 1/4** Material of screw shaft **S**

Is the screw shaft fitted with a continuous liner the whole length of the stern tube **Yes** Is the after end of the liner made water tight in the propeller boss **Yes** If the liner is in more than one length are the joints burned **Yes** If the liner does not fit tightly at the part between the bearings in the stern tube, is the space charged with a plastic material insoluble in water and non-corrosive **Yes** If two liners are fitted, is the shaft lapped or protected between the liners **Yes** Length of stern bush **5-6**

Dia. of Tunnel shaft as per rule **13.4** as fitted **14 1/8** Dia. of Crank shaft journals as per rule **14.09** as fitted **14 7/8** Dia. of Crank pin **14 7/8** Size of Crank webs **29 x 9 3/4** Dia. of thrust shaft under collars **14 7/8** Dia. of screw **18-0** Pitch of Screw **18-0** No. of Blades **4** State whether moveable **No** Total surface **107 1/4**

No. of Feed pumps **2** Diameter of ditto **4** Stroke **26** Can one be overhauled while the other is at work **Yes**

No. of Bilge pumps **2** Diameter of ditto **4** Stroke **26** Can one be overhauled while the other is at work **Yes**

No. of Donkey Engines **4** Sizes of Pumps **5 x 10 1/2, 8 x 12, 6 x 14 1/2, 8 x 8 x 8** No. and size of Suctions connected to both Bilge and Donkey pumps **In Engine Room 3, 3 1/2, Bunkers 2, 3 1/4** In Holds, &c. **Cofferdam 2, 3 1/4, Tanks 2-9**

No. of Bilge Injections **1** sizes **7** Connected to condenser, or to circulating pump **Yes** Is a separate Donkey Suction fitted in Engine room & size **Yes 3 1/2**

Are all the bilge suction pipes fitted with roses **Yes** Are the roses in Engine room always accessible **Yes** Are the sluices on Engine room bulkheads always accessible **Yes**

Are all connections with the sea direct on the skin of the ship **Yes** Are they Valves or Cocks **both**

Are they fixed sufficiently high on the ship's side to be seen without lifting the stokehold plates **Yes** Are the Discharge Pipes above or below the deep water line **above**

Are they each fitted with a Discharge Valve always accessible on the plating of the vessel **Yes** Are the Blow Off Cocks fitted with a spigot and brass covering plate **Yes**

What pipes are carried through the bunkers **None** How are they protected **Yes**

Are all Pipes, Cocks, Valves, and Pumps in connection with the machinery and all boiler mountings accessible at all times **Yes**

Are the Bilge Suction Pipes, Cocks, and Valves arranged so as to prevent any communication between the sea and the bilges **Yes**

Dates of examination of completion of fitting of Sea Connections **see Greenock Report** of Stern Tube **see Greenock Rpt.** Screw shaft and Propeller **see Greenock Rpt.**

Is the Screw Shaft Tunnel watertight **None** Is it fitted with a watertight door **Yes** worked from **Yes**

**BOILERS, &c.**—(Letter for record **S**) Manufacturers of Steel **Colvill, Lanarkshire + Spicer**

Total Heating Surface of Boilers **7869** Is Forced Draft fitted **Yes** No. and Description of Boilers **3 Single Ended**

Working Pressure **185** Tested by hydraulic pressure to **370** Date of test **22.5.14** No. of Certificate **12733**

Can each boiler be worked separately **Yes** Area of fire grate in each boiler **60 1/2** No. and Description of Safety Valves to each boiler **Double Spring** Area of each valve **9.62** Pressure to which they are adjusted **190** Are they fitted with easing gear **Yes**

Smallest distance between boilers or uptakes and bunkers or woodwork **24** Mean dia. of boilers **15-4 1/16** Length **11-9** Material of shell plates **S**

Thickness **15/16** Range of tensile strength **28/32** Are the shell plates welded or flanged **Yes** Descrip. of riveting: cir. seams **DR** long. seams **TR. DBS** Diameter of rivet holes in long. seams **13/8** Pitch of rivets **9/8** Top of plates on width of butt straps **1.8 5/8**

Per centages of strength of longitudinal joint **89.7** Working pressure of shell by rules **192** Size of manhole in shell **16 x 12**

Size of compensating ring **M. New** No. and Description of Furnaces in each boiler **3 Corrugated Material S** Outside diameter **4-0**

Length of plain part **top 37/16 bottom 64** Thickness of plates **top 37/16 bottom 64** Description of longitudinal joint **weld** No. of strengthening rings **—**

Working pressure of furnace by the rules **190** Combustion chamber plates: Material **S** Thickness: Sides **5/8** Back **5/8** Top **5/8** Bottom **7/8**

Pitch of stays to ditto: Sides **8 x 7 5/8** Back **8 x 7 1/16** Top **7 1/2 x 8 3/8** If stays are fitted with nuts or riveted heads **Nuts** Working pressure by rules **210**

Material of stays **S** Diameter at smallest part **1 1/4** Area supported by each stay **63** Working pressure by rules **209** End plates in steam space: Material **S** Thickness **1 1/32** Pitch of stays **15 1/2 x 18 1/2** How are stays secured **DN** Working pressure by rules **218** Material of stays **S**

Diameter at smallest part **6-9** Area supported by each stay **286.75** Working pressure by rules **240** Material of Front plates at bottom **S** Thickness **1** Material of Lower back plate **S** Thickness **15/16** Greatest pitch of stays **14 1/2 x 7 13/16** Working pressure of plate by rules **241**

Diameter of tubes **2 1/2** Pitch of tubes **33/4 x 3 11/16** Material of tube plates **S** Thickness: Front **1** Back **27/32** Mean pitch of stays **9 1/4**

Pitch across wide water spaces **13 1/2** Working pressures by rules **199** Girders to Chamber tops: Material **Iron** Depth and thickness of girder at centre **9 x 1 (2)** Length as per rule **2.9 1/2** Distance apart **8 3/8** Number and pitch of stays in each **3 at 7 1/2**

Working pressure by rules **205** Superheater or Steam chest; how connected to boiler **Can the superheater be shut off and the boiler worked separately**

Diameter Length Thickness of shell plates Material Description of longitudinal joint Diam. of rivet holes Pitch of rivets Working pressure of shell by rules Diameter of flue Material of flue plates Thickness

If stiffened with rings Distance between rings Working pressure by rules End plates: Thickness How stayed

Working pressure of end plates Area of safety valves to superheater Are they fitted with easing gear

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VERTICAL DONKEY BOILER— Manufacturers of Steel

No. \_\_\_\_\_ Description \_\_\_\_\_

Made at \_\_\_\_\_ By whom made \_\_\_\_\_ When made \_\_\_\_\_ Where fixed \_\_\_\_\_

Working pressure tested by hydraulic pressure to \_\_\_\_\_ Date of test \_\_\_\_\_ No. of Certificate \_\_\_\_\_ Fire grate area \_\_\_\_\_ Description of Safety \_\_\_\_\_

Valves \_\_\_\_\_ No. of Safety Valves \_\_\_\_\_ Area of each \_\_\_\_\_ Pressure to which they are adjusted \_\_\_\_\_ Date of adjustment \_\_\_\_\_

If fitted with easing gear \_\_\_\_\_ If steam from main boilers can enter the donkey boiler \_\_\_\_\_ Dia. of donkey boiler \_\_\_\_\_ Length \_\_\_\_\_

Material of shell plates \_\_\_\_\_ Thickness \_\_\_\_\_ Range of tensile strength \_\_\_\_\_ Descrip. of riveting long. seams \_\_\_\_\_

Dia. of rivet holes \_\_\_\_\_ Whether punched or drilled \_\_\_\_\_ Pitch of rivets \_\_\_\_\_ Lap of plating \_\_\_\_\_ Per centage of strength of joint \_\_\_\_\_ Rivets \_\_\_\_\_ Plates \_\_\_\_\_

Working pressure of shell by rules \_\_\_\_\_ Thickness of shell crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ No. of stays to do. \_\_\_\_\_ Dia. of stays \_\_\_\_\_

Diameter of furnace Top \_\_\_\_\_ Bottom \_\_\_\_\_ Length of furnace \_\_\_\_\_ Thickness of furnace plates \_\_\_\_\_ Description of joint \_\_\_\_\_

Working pressure of furnace by rules \_\_\_\_\_ Thickness of furnace crown plates \_\_\_\_\_ Radius of do. \_\_\_\_\_ Stayed by \_\_\_\_\_

Diameter of uptake \_\_\_\_\_ Thickness of uptake plates \_\_\_\_\_ Thickness of water tubes \_\_\_\_\_ Dates of survey \_\_\_\_\_

SPARE GEAR. State the articles supplied:—

2 Connecting Rod bolts 1/2" dia for top end, ditto for bottom end. 2 Main Bearing bolts 1 set of Coupling bolts 1 set of Fuel Pump Pipes 1 set of Piston Rings a quantity of small bolts + nuts + Iron of various sizes.

DUNSMUIR & JACKSON, Limited.

The foregoing is a correct description,

*James Jackson* Director. Manufacturer.

Dates of Survey while building

During progress of work in shops - -	1913. Aug. 18. 26. Sept. 8. 12. 18. 22. Oct. 2. 9. 16. 20. 25. Nov. 3. 10. 14. 20. 26. Dec. 2. 8. 24. 26. 29. 1914. Jan. 9. 16. 19. 26. 30. Feb. 12. 25. Mar. 3. 5. 17. 25. 27. 31. Apr. 8. 11. 24. 29. May. 4. 11. 22. 29. June 29. July 6. 16. 31. Aug. 6. 20. 29.
During erection on board vessel - - -	
Total No. of visits	48.

Is the approved plan of main boiler forwarded herewith yes.  
 " " " donkey " " " yes.

Dates of Examination of principal parts—

Cylinders	5	3	14	Slides	2	9	4	14	Covers	5	3	14	Pistons	2	5	2	14	Rods	2	5	2	14		
Connecting rods	2	5	2	14	Crank shaft	1	2	14	Thrust shaft	1	4	1	14	Tunnel shafts	1	9	1	14	Screw shaft	2	9	4	14	
Stern tube	9	1	14	Steam pipes tested	1	4	7	14	Engine and boiler seatings	Revised	Engines holding down bolts	3	7	14	Engines tried under steam	2	9	8	14					
Completion of pumping arrangements	6	8	14	Boilers fixed	3	1	7	14	Thickness of adjusting washers	AV 7/16 F B 7/16	PV 11/32 SV 3/8	AV 7/16 FV 7/16	PV 3/8 SV 5/16											
Main boiler safety valves adjusted	2	0	8	14	Material of Crank shaft	S	Identification Mark on Do.	LLOYDS HHS	Material of Thrust shaft	S	Identification Mark on Do.	LLOYDS HHS	Material of Tunnel shafts	S	Identification Marks on Do.	W.G.M	Material of Screw shafts	S	Identification Marks on Do.	W.G.M	Material of Steam Pipes	Iron	Test pressure	555 lb

General Remarks (State quality of workmanship, opinions as to class, &c.) These engines & Boilers have been built under special survey in accordance with the approved plan & the workmanship & material are of good quality. The Machinery is eligible in my opinion for the record of LMC 8-14. Note this vessel when launched was called "Mkisi" & now re-named "Guyahoga".

It is submitted that this vessel is eligible for THE RECORD + LMC 8. 14. F.D.

The amount of Entry Fee .. £ 3 : - : When applied for, 31/8/1914

Special .. £ 46 : 9 : When received, 2.9.14

Donkey Boiler Fee .. £ : : Travelling Expenses (if any) £ : :

*W. Gordon-Muclini*  
 Engineer Surveyor to Lloyd's Register of British & Foreign Shipping.

Committee's Minute GLASGOW 1 SEP. 1914

Assigned + L.M.C 8.14

MACHINERY CERTIFICATE WRITTEN 2/9/14



WEB-FRA  
 WEB-FRA  
 WEB-FRA  
 BRACKE  
 Web Fr  
 BULKE  
 W.T.BUL  
 AFTER  
 COLL  
 PARTIT  
 LONGIT  
 Are the c  
 Are the S  
 FLAT PLA  
 GARBOARD  
 State actual  
 thickness in  
 way of Double  
 Bottom.  
 SHEET  
 GLASGOW  
 Certificate (if required) to be sent to  
 (The Surveyors are requested not to write on or below the space for Committee's Minute.)  
 FR  
 RE  
 LOWER  
 Bowpr  
 Topmast  
 Rigging, Material and  
 Sails.